

SEQUENCE LISTING

Appl. No. 08/448,727

10

```
<110>
       Amgen Inc.
       Burnette, Walter N.
<120> MODIFIED PERTUSSIS TOXIN
<130>
       54113.8009.US00
<140>
       08/448,727
1995-05-24
<141>
      us 08/034,460
<150>
<151>
      1993-03-18
<150> US 07/232,482
<151>
      1988-08-17
       us 07/094,307
<150>
       1987-09-04
<151>
<160> 27
<170> PatentIn version 3.3
<210>
       12
<211>
<212>
      DNA
<213>
      Artificial
<220>
<223> Synthesized oligodeoxynucleotide
<400> 1
                                                                         12
catcgattct ag
<210>
<211>
       20
<212>
      DNA
      Artificial
<213>
<220>
       Synthesized oligodeoxynucleotide
<223>
<400> 2
                                                                         20
tgcagtagct aagatcttaa
<210>
       10
<211>
<212>
       DNA
<213> Artificial
<220>
       Synthesized oligodeoxynucleotide
<223>
<400> 3
```

<210> 4 <211> 12

cgatttgatt

		Appl.	No.	08/448,727
<212> <213>	DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> taaact	4 aaga tc			12
<210> <211> <212> <213>	5 46 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> ctagaa	5 ggaa ggaataacat atggttaacg cgttggaatt cggtac			46
<212>	6 38 DNA Artificial			·
<220> <223>	Synthesized oligodeoxynucleotide			
<400> ttcctt	6 cctt attgtatacc aattgcgcaa ccttaagc			38
<210> <211> <212> <213>	7 12 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
	7 ttct ac			12
<210> <211> <212> <213>	8 14 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> acgcaa	8 gatg agcc			14
<210> <211> <212> <213>	9 24 DNA Artificial			

		Appl.	No.	08/448,727
<220> <223>	Synthesized oligodeoxynucleotide			·
<400> tatgga	9 cgat ccacctgcta ccgt			24
<210> <211> <212> <213>	10 24 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> acctgct	10 tagg tggacgatgg cata			24
<210> <211> <212> <213>	11 22 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> attccg	11 ctat gactcccgcc cg			22
<210> <211> <212> <213>	12 24 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> aggcga	12 tact gagggcgggc ggcc			24
<210> <211> <212> <213>	13 22 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> atacaa	13 gtat gactcccgcc cg			22
<210> <211> <212> <213>	14 24 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			

		Appl.	No.	08/448,727
	14 tact gagggcgggc ggcc			24
<212>	15 22 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> ataccg	15 ctat gaatcccgcc cg			22
<212>	16 24 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> tggcga	16 tact tagggcgggc ggcc			24
<212>	17 22 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> ataccg	17 ctat gacggccgcc cg			22
<210> <211> <212> <213>	18 24 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400> tggcga	18 tact gccggcgggc ggcc			24
<210> <211> <212> <213>	19 22 DNA Artificial			
<220> <223>	Synthesized oligodeoxynucleotide			
<400>	19			22

<210> <211> <212> <213>	20 24 DNA Artificial	
<220> <223>	Synthesized oligodeoxynucleotide	
<400> tggcga	20 tact gaggttcggc ggcc	24
<210> <211> <212> <213>	21 22 DNA Artificial	
<220> <223>	Synthesized oligodeoxynucleotide	
<400> attggaa	21 atat gactcccgcc cg	22
<210> <211> <212> <213>	22 24 DNA Artificial	
<220> <223>	Synthesized oligodeoxynucleotide	
<400> acctta	22 tact gagggcgggc ggcc	24
<210> <211> <212> <213>	23 22 DNA Artificial	
<220> <223>	Synthesized oligodeoxynucleotide	
<400> atacaa	23 ctat gacggccgcc cg	22
<210> <211> <212> <213>	24 24 DNA Artificial	
<220> <223>	Synthesized oligodeoxynucleotide	
<400> tgttga	24 tact gccggcgggc ggcc	24
<210>	25 22	

<212> DNA

<213> Artificial

<220>

<223> Synthesized oligodeoxynucleotide

<400> 25

ataccgctat ccgtcccgcg ac

22

<210> 26

<211> 24

<212> DNA

<213> Artificial

<220>

<223> Synthesized oligodeoxynucleotide

<400> 26

tggcgatagg cagggcgctg ggcc

24

<210> 27

<211> 235 <212> PRT

<213> Bordetella pertussis

<400> 27

Asp Asp Pro Pro Ala Thr Val Tyr Arg Tyr Asp Ser Arg Pro Pro Glu
1 5 10 15

Asp Val Phe Gln Asn Gly Phe Thr Ala Trp Gly Asn Asn Asp Asn Val

Leu Asp His Leu Thr Gly Arg Ser Cys Gln Val Gly Ser Ser Asn Ser 35 40 45

Ala Phe Val Ser Thr Ser Ser Ser Arg Arg Tyr Thr Glu Val Tyr Leu 50 60

Glu His Arg Met Gln Glu Ala Val Glu Ala Glu Arg Ala Gly Arg Gly 65 70 75 80

Thr Gly His Phe Ile Gly Tyr Ile Tyr Glu Val Arg Ala Asp Asn Asn 85 90 95

Phe Tyr Gly Ala Ala Ser Ser Tyr Phe Glu Tyr Val Asp Thr Tyr Gly 100 105 110

Asp Asn Ala Gly Arg Ile Leu Ala Gly Ala Leu Ala Thr Tyr Gln Ser 115 120 125

Glu Tyr Leu Ala His Arg Arg Ile Pro Pro Glu Asn Ile Arg Arg Val 130 135 140 Thr Arg Val Tyr His Asn Gly Ile Thr Gly Glu Thr Thr Thr Glú 145 150 155 160

Tyr Ser Asn Ala Arg Tyr Val Ser Gln Gln Thr Arg Ala Asn Pro Asn 165 170 175

Pro Tyr Thr Ser Arg Arg Ser Val Ala Ser Ile Val Gly Thr Leu Val 180 185 190

Arg Met Ala Pro Val Ile Gly Ala Cys Met Ala Arg Gln Ala Glu Ser 195 200 205

Ser Glu Ala Met Ala Ala Trp Ser Glu Arg Ala Gly Glu Ala Met Val 210 215 220

Leu Val Tyr Tyr Glu Ser Ile Ala Tyr Ser Phe 225 230 235